

AEROSPACE DAY





PREK, K, 1, **2**, 3, 4, 5

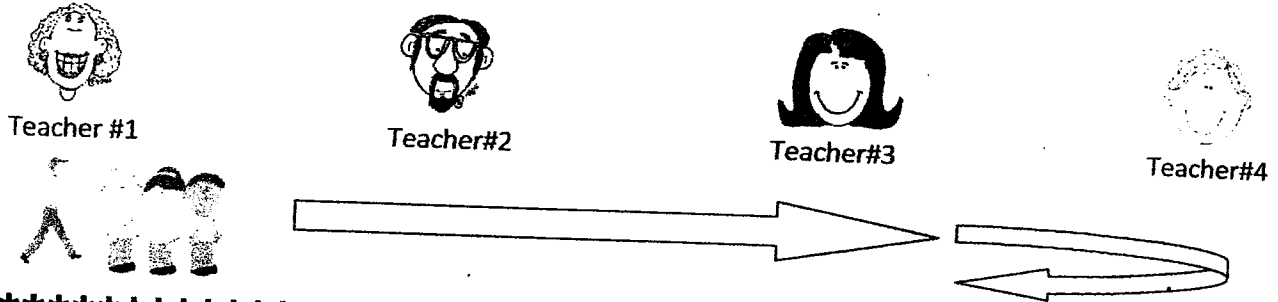
Grade Level Check List

1. Select method of rotation to use.
(Please refer to handout entitled "Rotation Methods" for descriptions of rotation options.)
2. Determine start and end time .
(It might be necessary to resume after recess, lunch, and/or intervention.)
3. Select 4 activities.
(Use the ones listed on the attached handout or replace them with ones you prefer.)
4. Determine time allotment for center activities .
*(Ex: 20 minutes per activity + 5-10min for lining up and rotating)....or
(Ex:30 minutes per activity + 5-10 min for lining up and rotating)....or
(Ex:30 minutes per activity. No rotation) ...or....*
5. Gather supplies needed for activities.
6. Today or by this Friday, give any worksheets you want photocopied to Mrs. Sharif.
 - (a) Clip copy paper to worksheet. (Extra paper will be returned.)
 - (b) Attach note stating
 1. your name. (I need know to whom to return the copies.)
 2. number of copies needed.
 3. special notes. (Ex: 2 sided)
7. Familiarize yourself with project/activity by making a sample or viewing it.
(Make the paper airplane. Can it be made it allotted time? Will students have enough time to test it a few times? How will you handle clean up time?)
8. Prep and store supplies/materials, if necessary.
(Ex: Teachers of lower grades might need to precut.)
9. Contact 3 -4 parents to assist on Aerospace Day - at least 1 parent per class.
Send Reminder home, Friday or Monday prior.
*(1 parent per class However, a parent is likely not needed for DVD activity, but can help elsewhere.)
(Duties: Parents help students implement task correctly and answer questions as needed. Also, once teacher has students lined up in an orderly manner, parent can walk them from class to class, if needed.)*

ROTATION METHODS

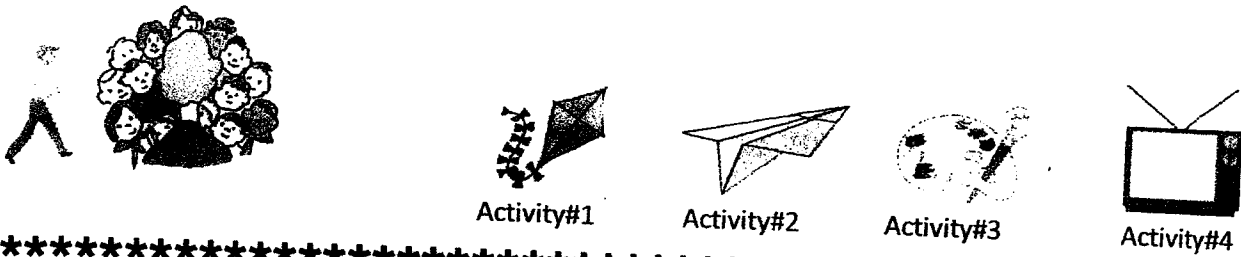
METHOD #1

- Teacher is stationary (remains in classroom). Teacher runs the same activity 4 times.
- Students rotate from classroom to classroom.
- Parent volunteer assists.



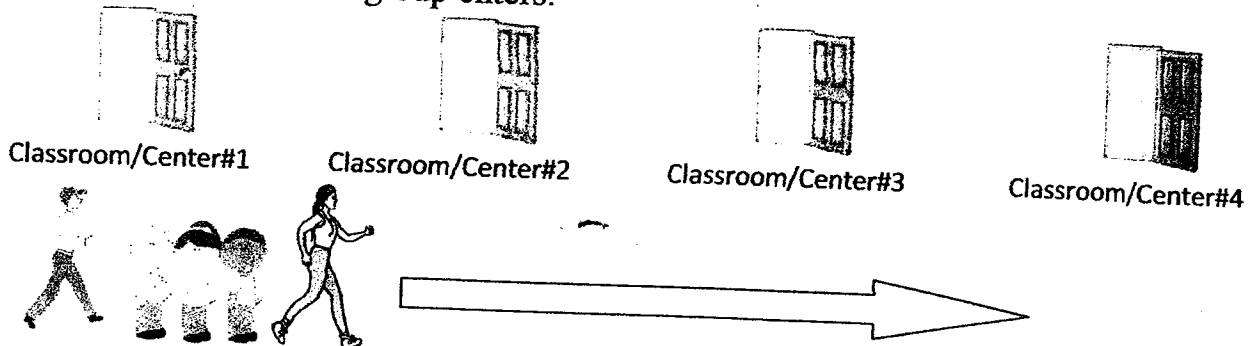
METHOD #2

- Teacher & students are stationary (remain in classroom). Teacher runs all 4 activities.
- Parent volunteer assists.



METHOD #3

- Each classroom serves as a center.
(ex: classroom #1 is used for Loop Plane Activity)
(ex: classroom #2 is used for painting picture of space shuttle.) ...and so on.
- Teacher, students and parent volunteer rotate. Teacher runs the activity already set up in each classroom that the group enters.



REMINDER TO:

SECOND GRADE ACTIVITIES

1. DVD + CLASS DISCUSSION

DVD Options to select from:

1. NEWS COVERAGE OF SPACE SHUTTLE COMING TO CALIFORNIA

(This DVD is supplied by Mrs. Sharif.)

(Types of discussion questions might be: What is a shuttle? Where did it go? What is NASA? How would you persuade NASA to bring and store the shuttle in California? What was your favorite part of the experience? Why? What kind of job do you have to get to be part of the shuttle program? What skills do you need to learn in school that would help you achieve this goal?...etc)

2. MAGIC SCHOOL BUS - SPACE ADVENTURES (approx: 30-35 min per episode)

(a) Episode 1 "Gets Lost in Space"

(b) Episode 2 "Out of This World"

(c) Episode 3 "Taking Flight"

3. Excerpt from a NOVA or NASA PROGRAM

4. Your Suggestions

2. EXPERIMENT & CHART ACTIVITY - LOOP AIRPLANE

(Refer to attached handout)

3. FOSS - (Select one of your grade-level created lessons from your September PD.)

4. MAKING PAPER AIRPLANES (Refer to attached handout.)

(a) Make (b) Fly (c) Record Distance Flown (c) Decorate

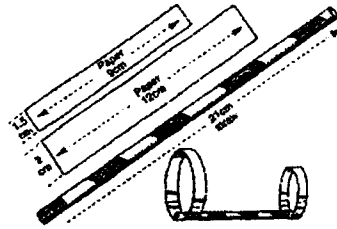
5. ART - "BUILD YOUR OWN SPACESHIP " (Refer to attached handouts)

Worksheet with coloring, cutting, gluing, painting stars (Optional)

If students finish early they can work on the "Seek & Find" worksheet

EXPERIMENT & CHART ACTIVITY

LOOP AIRPLANE



* **Pre-Activity Preparation:** 1. Create large charts for each class to record answers
What Affects Flight?

	YES	NO
SIZE?		
SHAPE?		

* **OPTION #1:** *Teacher pre-makes 12 small loop airplanes, 12 large loop airplane, and 12 small loop airplanes with tops pinched to form cone shape/pointy.
(Students work in pairs to fly planes and measure distance traveled)
*Pre draw ruler/measurements on ground with chalk

1. Ask: Does size of loops affect how far it flies?
Does shape of loops affect how far it flies? - circular vs, pointy at top
2. Test. (Students line up in front of multiple hand drawn rulers. Use chalk to draw measurements.)
3. Record Results

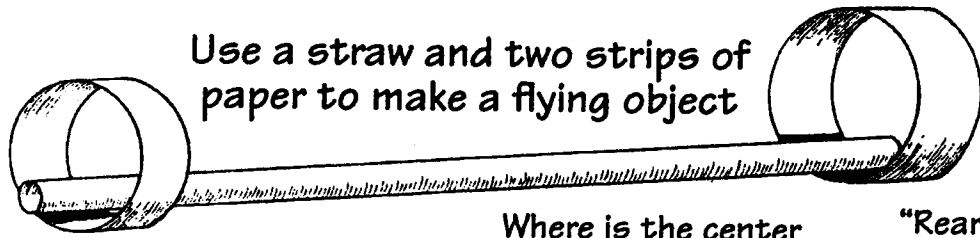
*******OR*******

* **OPTION #1:** *Students make loop airplanes (1with smaller loops and1with large loops).
* Pre draw ruler/measurements on ground with chalk

1. Ask: Does size of loops affect how far it flies?
Does shape of loops affect how far it flies? - circular vs, pointy at top
2. Test. (Students stand and drop the papers at a time to see which falls faster. Shape test should be done with one balled up paper, and one flat. Weight test can be done with penny taped to one sheet.)
3. Record Results

LOOP AIRPLANE

It's The Last Straw!

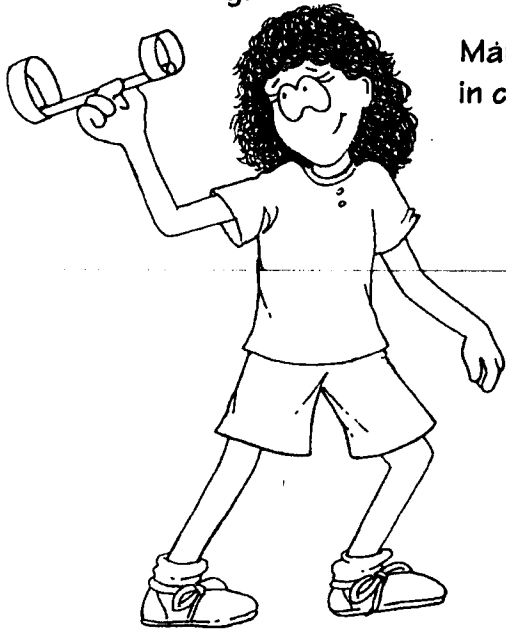


Use a straw and two strips of paper to make a flying object

Where is the center of gravity?

"Rear Wing"

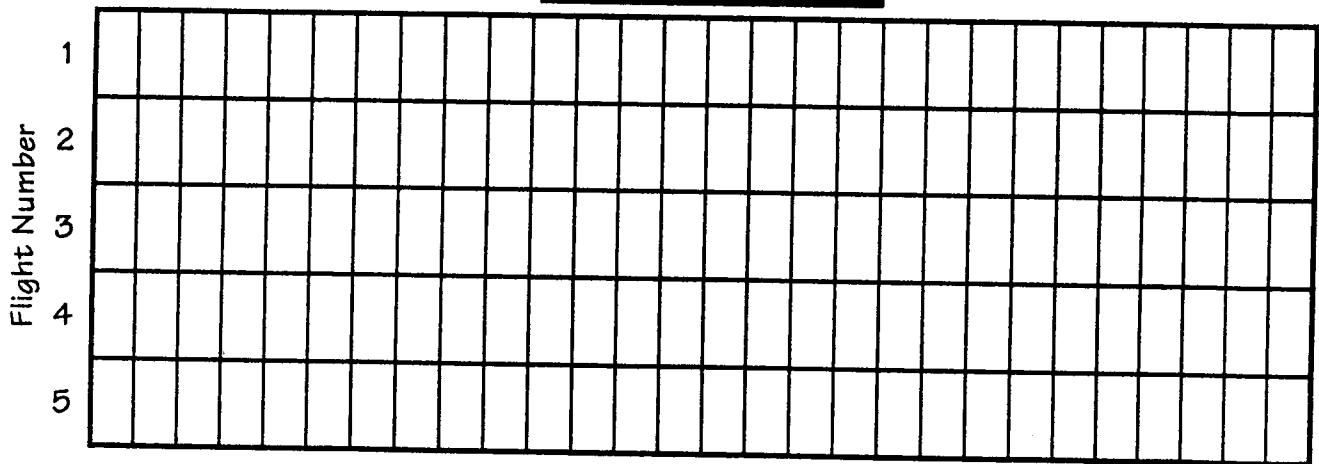
Use the patterns given for the strips (A and B from the next page). Cut out, form loops, and tape them to the ends of your straw as shown. Print your name or the plane's name on the rear wing.



Make five test flights. For each, measure the distance flown in centimeters, but record in both centimeters and meters.

Flight Number	Distance Flown (centimeters)	Distance Flown (meters)
1		
2		
3		
4		
5		
Total Average		

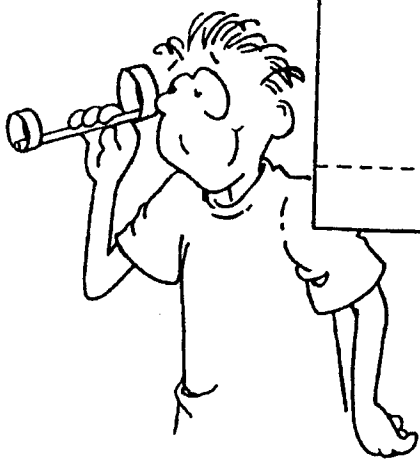
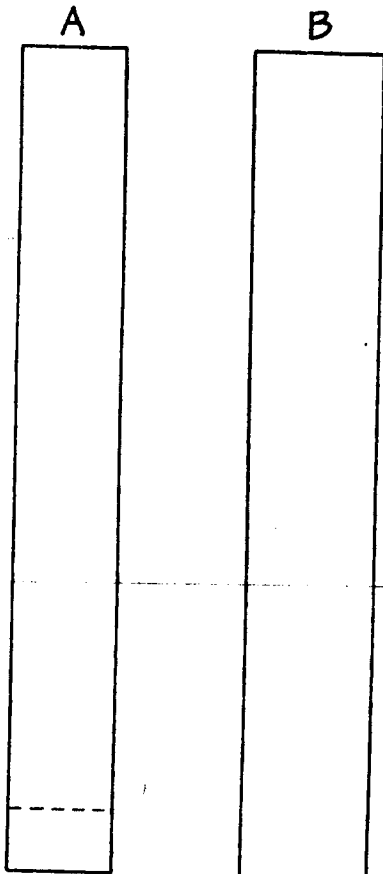
Flight Distance Graph



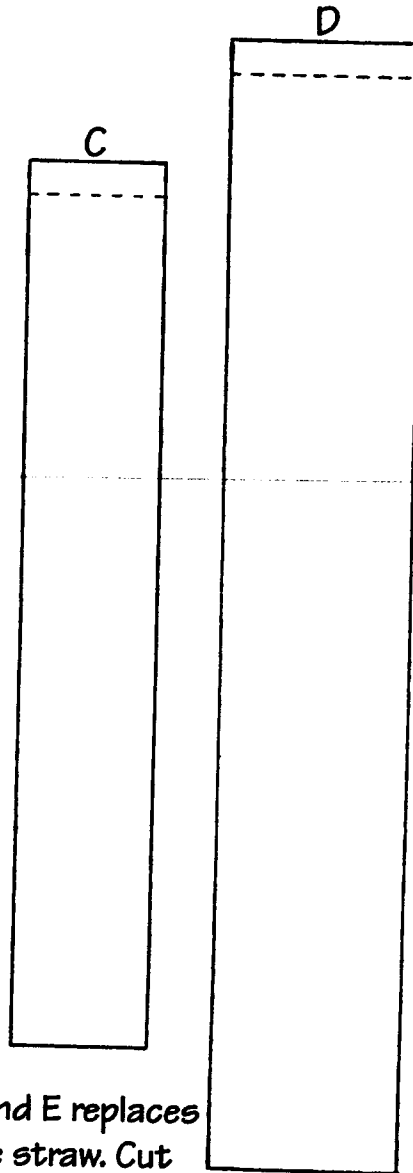
Distance of Flight

Patterns

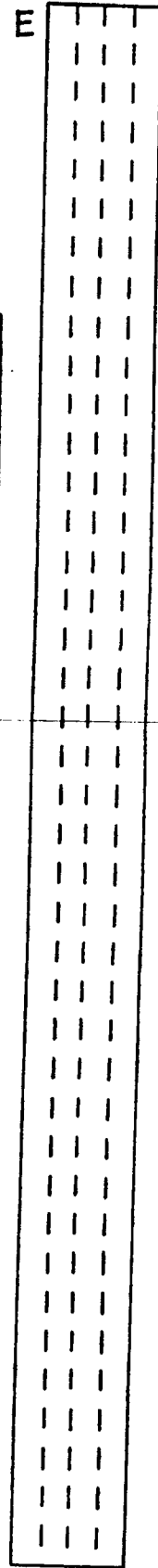
Straw Plane Bands



These pieces will create another version of the straw plane. C and D are used in the same way as in the first version.



Band E replaces the straw. Cut out E and score along dotted lines. Overlap two sides and glue to form a triangular rod. Glue the rod inside the rings.



Windsor Hills
Aerospace Project Unit Plan



Second Grade 9/25/12

Culminating Project

Describe the culminating Aerospace Project your students will engage in. Briefly describe what students are doing.

- building the rocket "Bottle Blast Off"

What science skills and knowledge will students learn as a result of this project?

- ⑤ know an objects motion, ⑤ make predictions, ⑤ know objects fall to the ground unless something holds them up, design effectiveness, measuring height (observable)

Unit Plan

Identify the 3 FOSS lessons that will lead up to culminating project:

Title of FOSS Lesson	Title of FOSS Lesson	Title of FOSS Lesson
The First Straw	Spinners	Magnets and Tools
<p style="text-align: center;">Brief Description of Lesson:</p> <p>- ⑤ learn standard & non-standards ^{of units} measurements</p>	<p style="text-align: center;">Brief Description of Lesson:</p> <p>- force of gravity causing <u>objects</u> to fall</p>	<p style="text-align: center;">Brief Description of Lesson:</p> <p>- how things move - making things move</p>
<p style="text-align: center;">Key Concepts:</p> <p>- learning measurement - predictions - follow oral directions</p>	<p style="text-align: center;">Key Concepts:</p> <p>- gravity - motion can be described by recording change in position over time - push and pull - predictions - measure length</p>	<p style="text-align: center;">Key Concepts:</p> <p>- push and pull (forces) to make things move - predictions based on observed patterns and not random guessing - follow oral instructions</p>

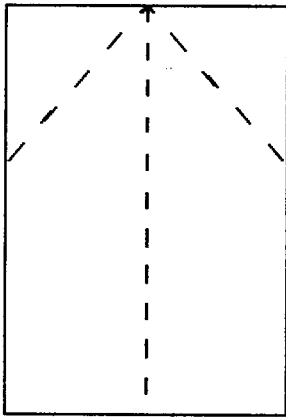
Standards

<p style="text-align: center;">What CONTENT standards does this unit cover?</p> <p>- measurement - follow oral directions - making predictions</p>	<p style="text-align: center;">What Investigation & Experimentation standards does this unit cover?</p>
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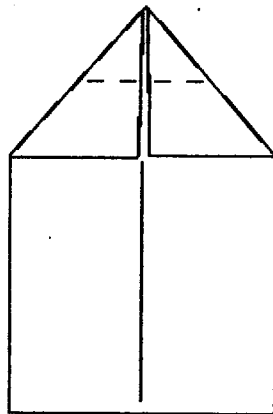
How to Make the High Glider Airplane

High Glider

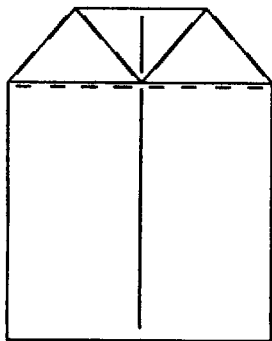
If you throw this one almost straight up, you may get flights of 10 seconds. It is also a good, straight indoor airplane.



Fold an 8.5 x 11 inch sheet of paper in half lengthwise and open back up. Fold the top corners down to the center.

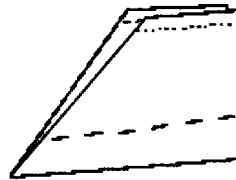
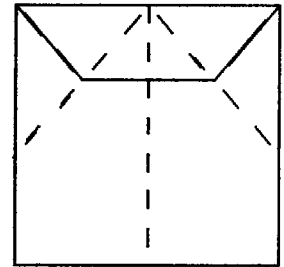


Now fold the point over to the bottom of the previous folds.

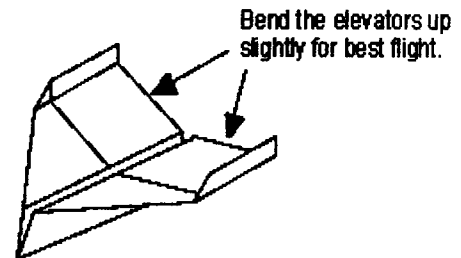


Fold the top down

Fold the top corners down to the center. Fold the plane in half towards you.



Now fold the wings out at an angle as shown. Fold the wingtips up.

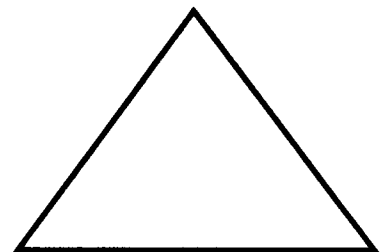
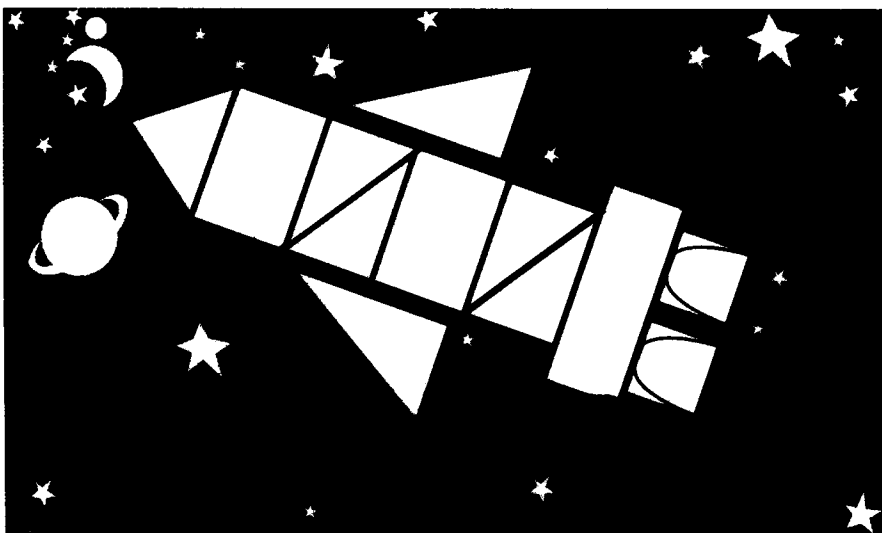
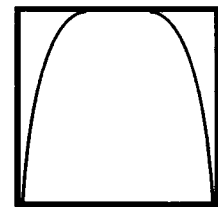
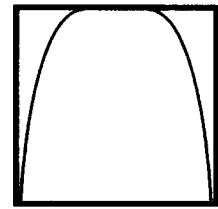
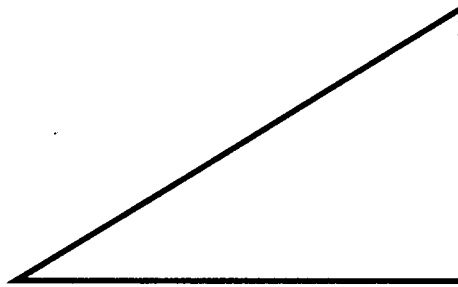
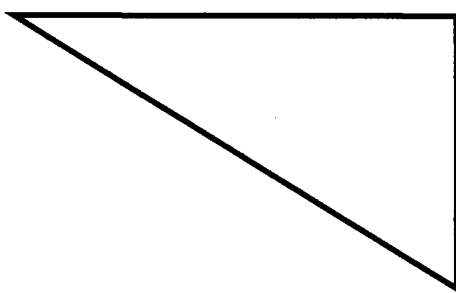
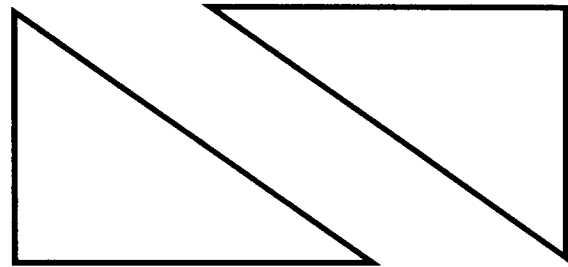
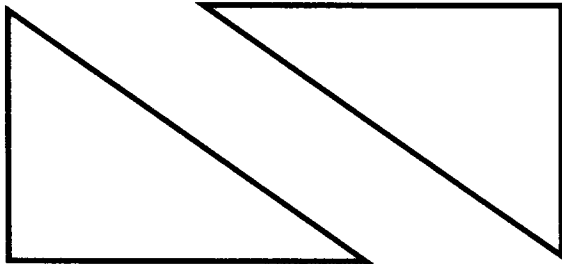
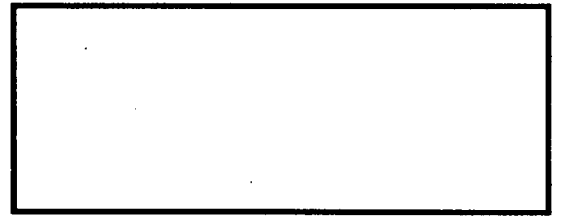
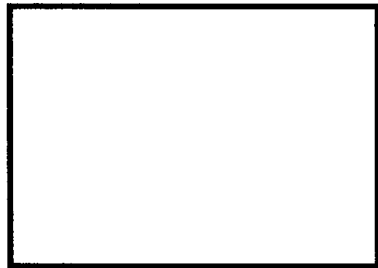
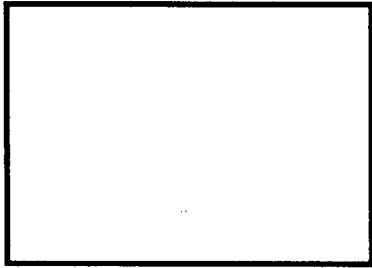


Write NAME on airplane. FLY it. DECORATE it with markers, crayons, stickers, or paint.

Build Your Own Spaceship

Cut out each shape. Use all the pieces.

Put them together to build your own spaceship.



Seek & Find

Can you find the 31 hidden space exploration words?

Hint: Check forward, backward and diagonally.

M A R S O L A R S Y S T E M M E H R U P T M
E X P A S R A O R L P X S E T A R O N H A R I P L
R O P C S I A R T S O A S H T O N N A M I F S L K
C O S R C E D N R E Y O C R S O L A C N J U L P I F S I P Y
U P R D S T A T R E W O C R S T O H G T U A Y N T O L O A T H E A L
R E S T J U P I O N A S E R U P T H A U S Y P L E A A T C C I E R O P U S A
S A H J U P I O N A S E R U P T H A U S Y P L E A A T C C I E R O P U S A
T U B P I O N A S E R U P T H A U S Y P L E A A T C C I E R O P U S A
R B I T A S E R U P T H A U S Y P L E A A T C C I E R O P U S A
A L E R S E R D I O N A S E R U P T H A U S Y P L E A A T C C I E R O P U S A
M I S S I O N A S E R U P T H A U S Y P L E A A T C C I E R O P U S A

Astroid

Astronaut

Comet

Commander

Crew

Earth

EVA (Extravehicular Activity)

Explore

Galaxy

Hubble (telescope)

Jupiter

Launch

Liftoff

Mars

Mercury

Milky Way

Mission

Mission Specialist

Moon

Neptune

Pilot

Venus

Planet

Pluto

Saturn

Shuttle

Solar System

Space Station

Star

Sun

Uranus